

# Comparative Study on the Spatial Layout of Buddhist and Taoist Temples in Chengdu

Yunzhang LI, Jingya LI, Xi LIU\*

**Abstract:** Buddhism and Taoism have enjoyed a flourishing development in Chengdu with many famous Buddhist and Taoist temples. This research takes typical Buddhist temple buildings and Taoist temple buildings in Chengdu as the research object. Through architectural surveying and mapping, the height and area data of temple buildings are quantized and counted, and their components and axial spatial plane and vertical layout characteristics are analyzed and compared. The results show that both Buddhist temples and Taoist temples are composed of two elements, including figure worship and non-figure worship. In the plane layout, they are mostly used in the south and straight line layout. The hierarchy of the halls in Buddhist temples is clear, while Taoist temples are more open. By clarifying their respective characteristics, the study achieved a comprehensive and systematic understanding of the spatial layout of Buddhist and Taoist temples in Chengdu, which is of great significance to enrich the connotation of religious architecture culture and improve the local culture of Sichuan.

**Keywords:** buddhist and taoist temples; chengdu area; comparative study; spatial layout

## 1 INTRODUCTION

Since the ninth emperor of the Kaiming Dynasty (666-316 B. C.) of ancient Shu State moved the capital to Chengdu, Chengdu has become the political, economic and cultural center of Sichuan province and even in Southwest China [1-2]. Buddhism and Taoism had been introduced into Chengdu thousands of years before. The earliest introduction of Buddhism into Chengdu was during the Eastern Han Dynasty (25 - 220), and was symbolized by the construction of the Longyuan Temple in ancient Shu State by Mao Qu (?-405), the then governor of Yi Prefecture, in the third year of the Long'an period (397 - 401) during the Eastern Jin Dynasty. At the same time, Taoism, as the local religion, was introduced into Bashu area (today's Sichuan region) in the late Eastern Han Dynasty (184 - 220) [3], when Zhang Daoling (the Taoist master), born in Pei County, came to Sichuan region to preach his religion. He respected Laozi as the founder of Taoism, and established "Tianshi Taoism (Celestial-Master Taoism)" with Tao Te Ching as its fundamental classic, which has been regarded as the establishment of Taoism. Since Zhang Daoling founded Taoism at Mount Heming of Dayi County in Chengdu [4], and interpreted and disseminated his religious doctrines in Mount Qingcheng in Chengdu, a Blessed Land of Taoism, Chengdu has become one of the birthplaces of Taoism. In this course, Buddhism and Taoism had been fully developed in Chengdu, with the construction of many famous Buddhist and Taoist temples. Studying the spatial layout of Buddhist and Taoist temple architectures and analyzing their spatial layout characteristics can enrich the connotation of religious architectural culture, as well as the local culture of Sichuan province.

At present, most of the studies on Buddhist Taoist temple architecture show strong regional characteristics. The research scope mainly covers the famous mountains, such as Wutai Mountain [5-6], Wudang Mountain [7] and Putuo Mountain [8]. In the study of temples in Southwest China, Yunnan, Sichuan and Chongqing are the most discussed areas, among which the famous Buddhist and Taoist mountains Qingcheng [9-10] and Emei [11-12] are the focus. Most of the studies take a single temple as the object, or select 2 - 3 temples for comparative discussion, and there are few studies on the systematic discussion of a

certain area. In terms of research content, there are more analyses on the decorative characteristics [10], spatial layout [13-14] and architectural art [11,15] of temples. Some other scholars cut in from the perspective of history and culture. Wang et al. [16] discussed the regionalization characteristics of Buddhist grottoes in Sichuan during the Tang and Song Dynasties, and Chen [12] analyzed the construction characteristics of five temples and gardens in Mount Emei. In contrast, Chengdu occupies the hub position of cultural integration, but the discussion of related temple architecture is still weak, and the overall comparative study of the region is lacking.



Figure 1 Locations of Buddhist and Taoist temples in Chengdu

Therefore, this article selected 24 well-preserved Buddhist temples and 18 Taoist temples in Chengdu as the research objects (see Fig. 1, Tab. 1). Just as general Chinese traditional architectures, these Buddhist and Taoist temple architectures follow the axial symmetry in spatial layout, which arrange buildings of higher rank on the central axis, and thus, the axial space becomes the main space of the temples concerned. Therefore, the research focused on the axial space which could best reflect the spatial layout of Buddhist and Taoist temple architectures, and carried out an analysis on their constituent elements, plane and vertical layout.

**Table 1** Statistics of Buddhist and Taoist temples

No.	Name	Level	Location	No.	Name	Level	Location	
F01	Lingyan Temple	National	Dujiangyan city	F13	Randeng Temple	Municipal	Longquanyi District	
F02	Puzhao Temple	Provincial		F14	Wenshu Temple	Provincial	Qingyang District	
F03	Banruo Temple	County		F15	Baoguang Temple	National	Xindu District	
F04	Tai'an Temple			F16	Longcang Temple	Provincial		
F05	Yongle Temple	Provincial	Qionglai City	F17	Daci Temple	Provincial	Jinjiang District	
F06	Xingfu Temple	Provincial		F18	Jinhua Temple	Provincial	Jinniu District	
F07	Shita Temple	Municipal		F19	Nanhua Temple	Provincial	Jintang County	
F08	Fazang Temple	Provincial	Pengzhou City	F20	Ruiguang Temple	County		
F09	Yonghua Temple	Municipal		F21	Guanyin Temple	National	Xinjin County	
F10	Xiagu Temple	Provincial	Chongzhou City	F22	Zhenjiang Temple	Municipal	Shuangliu County	
F11	Tanyun Temple			F23	Shifo Temple	Provincial	Pidu District	
F12	Shijing Temple	Provincial	Longquanyi District	F24	Zhongxing Temple	County		
D01	Erwang Temple	National		D10	Quqing Taoist Temple	National	Dujiangyan city	
D02	Fulong Temple	National		D11	Taiqing Taoist Temple	County		
D03	Chenghuang Temple	National		D12	Qingyang Taoist Temple	Provincial	Qingyang District	
D04	Jianfu Temple	National		D13	Sanqing Taoist temple	Provincial	Qingbaijiang district	
D05	Zhenwu Daoist Temple	National		D14	Guansheng Taoist Temple	Provincial	Jintang County	
D06	Laojun Hall	National		D15	Shuwang Taoist Temple	Provincial		
D07	Yuanming Daoist Temple	National		D16	Chunyang Taoist temple	Provincial	Xinjin County	
D08	Shangqing Temple	National		D17	Chuanwang Taoist Temple	National	Dayi County	
D09	Heavenly Master Temple	National		D18	Shangyuan Taoist Temple	Municipal	Chongzhou City	

## 2 ANALYSIS OF THE CONSTITUENT ELEMENTS OF THE AXIAL SPACE OF BUDDHIST AND TAOIST TEMPLE ARCHITECTURES IN CHENGDU

The constituent elements of the axial space in these Buddhist and Taoist temples are listed in Tab. 2. Among them, there are 15 constituent elements of the axial space in Buddhist temples, including 4 halls for worshipping unanimated objects and 11 halls for worshipping animated objects. The halls for worshipping unanimated objects are the Front Gate, the Xilou Tower, the Sutra Tower and the

Dharma-dissemination Hall. The Front Gate, usually the first building of a temple [17], is the entrance and exit of the temple; the Xilou Tower, also known as the "Yuelou Tower" and the "Wannian Terrace (an ancient theatrical stage)", is a building for theatrical performances, and generally, festival celebrations and temple fairs are held here [18]; the Sutra Tower is a place where the precious scriptures of the temple are collected and stored; and the Dharma-dissemination Hall is a place where the Buddhist masters interpret Buddhist Dharma to the world.

**Table 2** Statistics of constituent elements of the axial space of Buddhist and Taoist temples

Category	No.	Name of the Hall	Frequency / Time	Explain	Category	No.	Name of the Hall	Frequency / Time	Explain	
Halls for Worshipping Unanimated Objects	f01	The Front Gate	18	Usually the first building of a temple, or the entrance and exit of the temple.	Buddhist Deities	f09	Daxiongobao Hall	24	Also known as the "Shakyamuni Hall", hall for worshipping Sakyamuni Buddha.	
	f02	Xilou Tower	3	Also known as the "Yuelou Tower" and the "Wannian Terrace", or the ancient theatrical stage.		f10	Medicine Buddha Hall	1	Hall for worshipping Medicine Buddha.	
	f03	Sutra Tower	8	A place where the precious scriptures of the temple are stored, and a place for monks to read Scriptures or to receive distinguished guests		f11	Dharma Hall	1	Hall for worshipping Bodhidharma.	
	f04	Dharma-dissemination Hall	1	A place where the Buddhist masters interpret Buddhist Dharma to the world		f12	Dizang Hall	1	Hall for worshipping Dizang Bodhisattva.	
Buddhist Deities	f05	Heavenly Kings' Hall	10	Hall for worshipping four heavenly kings, who are the Dharma protectors of Buddhism.		f13	Qifo Hall	2	Hall for worshipping seven Buddhas.	
	f06	Weituo Hall	2	Hall for worshipping Skanda Bodhisattva who is the leader of 32 generals of the four heavenly kings.		f14	Jieyin Hall	1	Hall for worshipping Jieyin Immortal.	
	f07	Mile Hall	3	Hall for worshipping Maitreya who is the successor of Sakyamuni Buddha, and is the representative of "great quantity and great fortune", reminding people of learning tolerance.		Historical Figures	f15	Chuanwang Hall	2	Also known as the "Libing Hall" and the "Laowang Hall", hall for consecrating Li Bing (the excavator of Dujiangyan Irrigation System and the satrap of the ancient Shu Prefecture of Qin State).
	f08	Guanyin Hall	14	Also known as the "Yuantong Hall" and the "Niangniang Hall", for worshipping Guanyin Bodhisattva.		/	/	/	/	

**Table 2** Statistics of constituent elements of the axial space of Buddhist and Taoist temples (continuation)

Category	No.	Name of the Hall	Frequency / Time	Explain	Category	No.	Name of the Hall	Frequency / Time	Explain
Halls for Worshipping Unanimated Objects	d01	The Front Gate	11	The first building of a temple, or the entrance and exit of the temple.	Immortals of Taoism	d18	Guanyin Hall	2	It's also known as the "Cihang Hall", hall for worshipping Cihang Immortal (the Immortal of Merciful Navigation).
	d02	Xilou Tower	5	Also known as the "Yuelou Tower" and the "Wannian Terrace", or the ancient theatrical stage.		d19	Yuhuang Hall	2	Hall for worshipping Jade Emperor (the Supreme Immortal of Taoism).
	d03	Shidian Hall	1	Also known as the "Shilong Hall", with drawings based on many stories and legends related to dragons		d20	Zushi Hall	1	Hall for worshipping the founders of Taoism, such as Zhenwu Emperor and Jade Emperor.
	d04	Eight Diagram Pavilion	2	An important symbol of the Taoist doctrine that "Round heaven with square earth, Yin and Yang interact with and generate each other; with the integration of the Eight Diagrams, myriads of things evolve".		d21	Chuanwang Hall	3	Also known as the "Libing Hall" and the "Laowang Hall", hall for consecrating Li Bing (the excavator of Dujiangyan Irrigation System and the satrap of the ancient Shu Prefecture of Qin State).
	d05	Lingzu Hall	8	Also known as the "Lingguan Hall", hall for worshipping the Taoist spiritual officers who are the Taoist Dharma protectors.		d22	Erlang Hall	1	Hall for worshipping Li Erlang (the son of Li Bing).
	d06	Mawang Hall	1	Hall for worshipping Ma lord who is also called Marshal Ma, and is one of the most powerful generals among the Taoist deities.		d23	Jieyi Hall	1	Hall built in memory of the story that Liu Bei, Guan Yu and Zhang Fei took oath to become sworn brothers in the Peach Garden.
	d07	Laojun Hall	7	Also known as the "Hunyuan Hall", hall for worshipping "Lord Lao Zi" who is regarded as one of the founders of Taoism.		d24	Guansheng Hall	1	Hall for worshipping Guanyu.
	d08	Three Emperors' Hall	1	Hall for worshipping three ancestors of Taoism.		d25	Yuwang Hall	1	Hall for worshipping Da Yu (the first emperor of the Xia Dynasty).
	d09	Ancient Emperor's Hall	1	Hall for worshipping Huangdi.		d26	Qisheng Hall	2	Hall for worshipping Confucius.
	d10	Chenghuang Hall	1	Hall for worshipping Chenghuang, who is the god guarding the city.		d27	Tangwang Hall	1	Hall for worshipping Li Shimin (emperor Taizong of the Tang Dynasty, 626-649).
Halls for Worshipping Animated Objects	d11	Caishen Hall	1	Hall for worshipping Caishen who is the immortal in charge of financial resources.	Historical Figures	d28	Sanfenglvzu Hall	1	Hall for worshipping Zhang Sanfeng (the founder of Wudang School of Taoism, 1247-?) and Lv Dongbin (the Immortal of Taoism)
	d12	Doumu Hall	2	Hall for worshipping the Taoist immortal Doumu Yuanjun.		d29	Kuixing Tower	1	Also known as the "Tiebitianjun Hall", hall for worshipping Kuixing (the Immortal of Literature).
	d13	Sanguan Hall	2	Also known as the "Sanyuan Hall", hall for worshipping three immortal officials.		d30	Zhangren Hall	1	Hall for worshipping "Wuyuezhangren" (also called Ningfenzi, an official in charge of pottery-making of the Yellow Emperor times).
	d14	Donghua Hall	1	Hall for worshipping Donghua Emperor.		d31	Yuqing Hall	1	Hall for worshipping Ningfenzi and Sun Simiao (the King of Medicine).
	d15	Sanqing Hall	7	Hall for worshipping the most holy deities of Daoism, the Sanqing Zushi (the Three Pure Ones)		d32	Wenchang Hall	1	Hall for worshipping the Emperor Wenchang.
	d16	the Hall of Heavenly Masters	1	Hall for worshipping four Taoist Heavenly Masters, Zhang Daoling, Ge Xuan, Sa Shoujian and Xu Jingyang.	Folk Deities	d33	Tiefo Hall	1	Hall for worshipping Shakyamuni.
	d17	Lvzu Hall	1	Also known as the "Chunyang Hall", hall for worshipping the Taoist immortal of Lv Dongbin.		/	/	/	/

The halls for worshipping animated objects include the Heavenly Kings' Hall, the Weituo Hall (worshipping Skanda Bodhisattva), the Mile Hall (the Hall of Maitreya), etc. Except the Chuanwang Hall that worships Li Bing, the hero of water control in Sichuan (302 - 235 B. C.), most of these halls are for worshipping Buddhist deities. Among

them, the Daxiongao Hall (the Shakyamuni Hall) is often the central building of the whole temple, where monks practice precepts together in the morning and at night. And thus, it becomes a constituent element that enjoys the highest frequency of occurrence in the axial space of Buddhist temple architectures, which is also found in each

of the temples selected for this research, while the Front Gate, the Guanyin Hall and the Sutra Tower enjoy less frequency of occurrence.

There are 33 constituent elements of the axial space of Taoist temple architectures, including 4 halls for worshipping unanimated objects and 29 halls for worshipping animated objects. The halls for worshipping unanimated objects include the Front Gate, the Xilou Tower, the Shidian Hall and the Eight Diagram Pavilion. Among them, the Eight Diagram Pavilion is an important symbol of the Taoist doctrine that "Round heaven with square earth, Yin and Yang interact with and generate each other; with the integration of the Eight Diagrams, myriads of things evolve". The Shidian Hall, also named the Shilong Hall (the hall of ten dragons), in which are painted drawings based on many stories and legends related to dragons, is only built in the Chenghuang Temple of Dujiangyan City. The halls for worshipping animated objects include the Lingzu Hall, the Laojun Hall, the Three Emperors' Hall, etc. A variety of deities are worshipped in these halls, including 16 immortals of Taoism, 8 historical Fig. 4 folk deities, as well as one Buddhist deity. Among these halls, the Sanqing Hall, similar to the Daxiong Hall (the Shakyamuni Hall) in Buddhist temple, is generally the central building of Taoist temples [19-20], and also the hall to worship the holiest deities of Taoism, the Sanqing Zushi (the Three Pure Ones). However, it is not the constituent element of spatial layout with the highest frequency of occurrence. There are 11 out of 18 Taoist temples selected that do not have the Sanqing hall, including the Erwang Temple, the Fulong Temple (the Taming-Dragon Temple), the Chenghuang Temple, etc..

Then, by comparing the constituent elements of the axial space of Buddhist and Taoist temple architectures, certain features were concluded as follows:

1) The same constituent elements in the axial space of both the Buddhist and the Taoist temple architectures include the Front Gate and the Xilou Tower for worshipping unanimated objects, as well as the Guanyin Hall and the Chuanwang Hall for worshipping animated objects. Among them, the Front Gate is the entrance building and the Xilou Tower is the performance venue in both the Buddhist and the Taoist temples. Worshipped in the Guanyin Hall, the Buddhist deity of Guanyin is the Shangshou Buddha (the prominent Bodhisattva) of the Western Heaven, who is the best Savior that embodies the compassion (Maitri-Karunā) and mercy (Mahā-Karunā) of all Buddhas; meanwhile, Guanyin is also included in the immortal system of Taoism, since he is worshipped as the Cihang Immortal (the Immortal of Merciful Navigation) in Taoist temples. The Chuanwang Hall is used to consecrate Li Bing, the excavator of Dujiangyan Irrigation System and the satrap of the ancient Shu Prefecture of Qin State. Generally, the constituent elements of the axial space in both the Buddhist and the Taoist temple architectures are characterized by mutual absorption, integration, secularization and localization.

2) In terms of the number and type of the constituent elements, those of Buddhist temple architectures are fewer in number and type than those of the Taoist temple architectures, with all their halls worshipping the Buddhist deities except the Chuanwang Hall that worships the human figure. On the contrary, constituent elements of

Taoist temple architectures are numerous and complicated. The halls worshipping animated objects are used not only to consecrate the Taoist immortals, but also to worship many historical figures, such as Li Shimin (emperor Taizong of the Tang Dynasty, 626-649), Da Yu (the first emperor of the Xia Dynasty) and Zhang Sanfeng (the founder of Wudang School of Taoism, 1247-?). Besides, the Buddhist deities are also worshipped in halls of Taoist temples, such as the Tiefo Hall (worshipping Shakyamuni) of the Fulong Temple (the Taming-Dragon Temple).

3) With regard to the frequency of occurrence of the constituent elements, the Daxiong Hall (the Shakyamuni Hall) as the central building has the highest frequency of occurrence in Buddhist temple architectures, while the Front Gate has the highest frequency of occurrence among Taoist temple architectures. Five types of halls in Buddhist temples have the lowest frequency of occurrence, including the Dhama-dissemination Hall, the Medicine Buddha Hall, the Dharma Hall, the Dizang Hall and the Jieyin Hall; and 22 types of halls in Taoist temples have the lowest frequency of occurrence, taking 67% of all the constituent elements, such as the Shidian Hall, the Mawang Hall, and so on. Each of them appears only once in one of the temples. Therefore, the Taoist temples have more variety in the construction of halls than the Buddhist temples, and the selection of the halls to be constructed is made respectively according to different needs of different Taoist temples, without being confined to the central buildings.

### 3 ANALYSIS OF THE PLANE LAYOUT OF THE AXIAL SPACE OF BUDDHIST AND TAOIST TEMPLE ARCHITECTURES IN CHENGDU

The plane layout of the axial space of Buddhist and Taoist temple architectures in Chengdu is shown in Fig. 2 and Fig. 3. Based on the analysis of data of Buddhist and Taoist temple architectures, including their orientation, axial space's moving line (working as guideline for people moving among these buildings), number of halls, sequence of halls, and hall area, the following results were obtained:

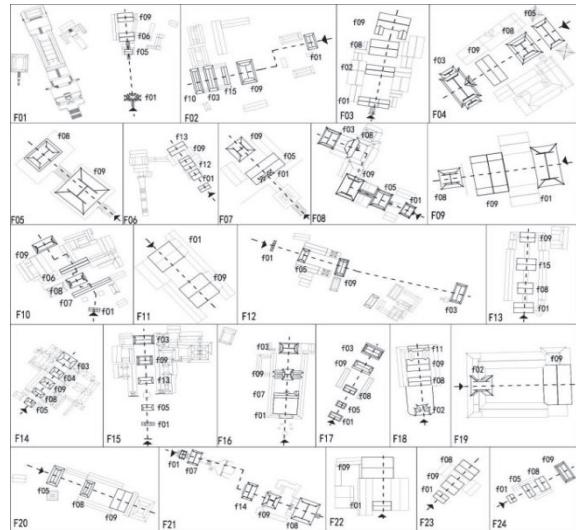


Figure 2 Plane layout of Buddhist temples in Chengdu

The Buddhist temple architectures selected for the research are mainly oriented to the south, and the moving

line on axial space is mainly linear, apart from the Puzhao Temple of the Daguan Town, the Fazang Temple, and the Guanyin Temple, whose moving lines are curved. The number of halls in a temple is up to four or five. Usually, the first hall is the Front Gate and the last hall is the Daxiong Hall (the Shakyamuni Hall) or Sutra Tower. In addition, the area of a given hall is related to its position in the axial spatial sequence. That is, the first hall has the smallest area, while the last hall has the biggest area.

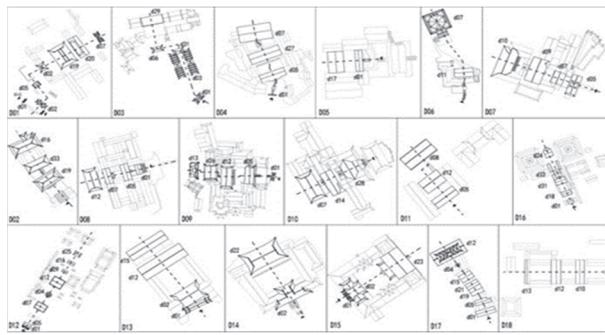


Figure 3 Plane layout of Taoist temples in Chengdu

Like the Buddhist temples, the Taoist temple architectures selected for the research are mainly facing south, and are never oriented to the north. In terms of the moving line of axial space, the linear type could be found in 10 temples, such as the Zhenwu Taoist Temple, the Yuanming Taoist Temple, etc., taking up 56% of all; while the curved type could be found in 8 of all the selected temples, such as the Fulong Temple (the Taming-Dragon Temple), the Chenghuang Temple, etc., taking up 44% of all. And the number of halls in the Taoist temples is generally from two to eight. In terms of the spatial sequence, the Front Gate is usually located in the first hall, while the types of halls at other positions of the axial space are quite varied. In terms of the hall area, the first hall, such as the Front Gate, is usually the smallest among all the halls in the axial space of Taoist temple architectures. Though the last hall is usually the biggest in area, it is diverse in category, including 13 different categories of halls, such as the Laojun Hall, the Sanqing Hall, and the Heavenly Masters' Hall, etc.

By a comparative analysis of the plane layout between Buddhist and Taoist temple architectures, some certain features were concluded as follows:

- 1) In terms of the orientation, although the Buddhist and Taoist temple architectures selected for research are various in orientation, most of them face south and there is no temple facing north except the Tanyun Buddhist Temple, which indicates that most of the temple architectures comply with the south-facing layout rule of traditional Chinese architectures.
- 2) In terms of the moving line, most Buddhist temple architectures take the linear type. That is, halls of different categories are built in order along the moving line, and the number of halls ranges from two to five; however, the linear-typed moving line and the curve-typed moving line can be both found in Taoist temple architectures, and the number of halls ranges from two to eight. Rather than being constructed directly on the moving line, some of the Taoist temple architectures are constructed at either side of the moving line, such as the Front Gate of Erwang Temple and

the Shilong Hall of Chenghuang Temple, etc. So, generally, the moving line of axial space for Buddhist temple architectures is straight and short, while the moving line of axial space for Taoist temple architectures is curved and long.

3) In terms of the sequence, the first hall of both Buddhist and Taoist temples is usually the Front Gate, functioning as the entrance. Then, in Buddhist temples, some relatively important halls, such as the Heavenly Kings' Hall and the Guanyin Hall, are placed at the second and the third places, and the Daxiong Hall (the Shakyamuni Hall) or Sutra Tower (more important halls), at the last place. Therefore, the sequence of the halls in the axial space of Buddhist temples follows a rigid order, with emphasis on the status and hierarchy of halls in the axial space. Generally speaking, the more important the hall is, the closer to the last it will be in the sequence; the Taoist temple architectures are usually more random in category and number of the halls, and are relatively free in combinations of different halls without particular sequential rule.

4) In terms of the hall area, either the 14 Buddhist temples that take 58% of all the Buddhist temples for research, or the 13 Taoist temples that take 72% of all the Taoist temples for research, follow the rule that the first hall has the smallest area, and the last hall the biggest. The Front Gate, either of Buddhist or Taoist temples, is designed as the first hall. Smallest as it is, the first hall has the high frequency of occurrence among the Buddhist and Taoist temples. Considering that in some ways the size of the hall area reflects its status among the halls in one temple, the status of Front Gate might be lower than that of any other hall though it is an important constituent component in the Buddhist and Taoist temple architectures. As for those with the biggest area in Buddhist temples, the Daxiong Hall (the Shakyamuni Hall) or the Sutra Tower usually take the lead in area; as for the Taoist temples, there are more types of halls, and the immortal chosen for worship in every hall is made according to different needs of different temples. And thus, the hall where the immortal with the highest status is worshipped usually has the biggest hall area in the Taoist temple.

#### 4 ANALYSIS OF THE VERTICAL LAYOUT OF THE AXIAL SPACE OF BUDDHIST AND TAOIST TEMPLE ARCHITECTURES IN CHENGDU

The vertical layout of the axial space of architectures of Buddhist and Taoist temples in Chengdu is shown in Fig. 4 and Fig. 5. With statistics analysis on the height, level distance and height difference of the Buddhist and Taoist halls, the results are shown as follows.

Lined along the axial space, each hall of the Buddhist temple architectures has its height correspond with its area. That is, the highest (or lowest) hall is always the biggest (or smallest) in area, apart from the Lingyan Temple, the Pagoda Temple and the Nanhua Taoist Temple where the Daxiong Hall (the Shakyamuni Hall) is the biggest, while the Front Gate or the Xilou Tower is the highest so that it can best fulfill its directing and guiding function of the entrance. In addition, the level distance between every two halls usually reflects the change in the vertical direction among different halls of Buddhist temple architectures. To highlight their status among temple

architectures, the important halls usually have longer level distance than other halls.

But along the axial space of the Taoist temples, the height of a hall does not necessarily correspond to its size, which means that the highest (or lowest) hall is not always the largest (or smallest) one, such as the Fulong Temple (the Taming-Dragon Temple), the Chenghuang Temple, the Jianfu Taoist Temple and three other temples, whose highest halls are not the largest ones. In addition, the vertical changes of two-thirds of the Taoist temples, are mainly reflected by the height difference of halls. For example, in 7 temples, such as the Erwang Temple and the Fulong Temple (the Taming-Dragon Temple), the hall height difference increases along from the entrance to the last hall; in other 4 temples, such as the Chenghuang Temple and the Shangqing Temple, the hall height difference is raised from the first and the second halls. This is caused by the fact that most Taoist temples are built in mountainous area, taking advantage of the geographical features to enrich their vertical layout.

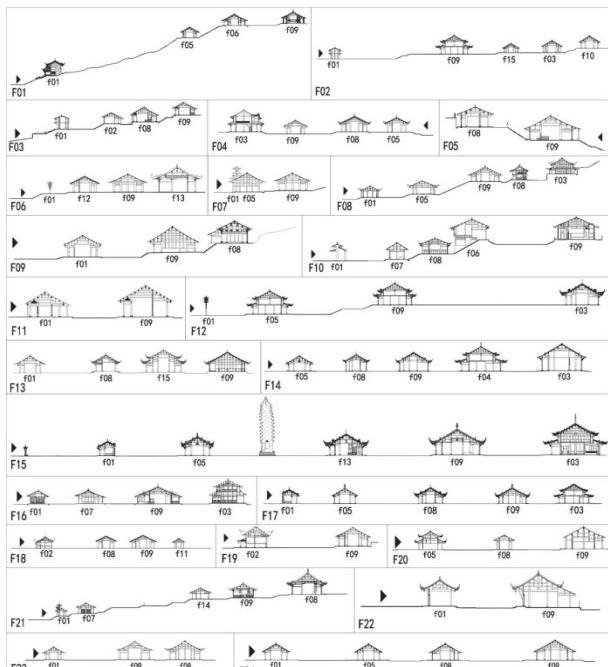


Figure 4 Vertical layout of Buddhist temples in Chengdu

Table 3 Analysis of the axial space of Buddhist temples

Number of Halls	No. / Temple	Orientation	Moving Line	No. / Hall	Hall Area / m <sup>2</sup>	Hall Height / m	Level Distance / m	Height Difference / m	No. / Hall	Hall Area / m <sup>2</sup>	Hall Height / m	Level Distance / m	Height Difference / m	No. / Hall	Hall Area / m <sup>2</sup>	Hall Height / m	Level Distance / m	Height Difference / m	No. / Hall	Hall Area / m <sup>2</sup>	Hall Height / m
Two	F05	45°South by East/Facing South	Straight	f09	4487.5 max.	8.6 highest	12.0	3.3	f08	2084.6 min.	5.6 lowest	/	/	/	/	/	/	/	/	/	/
	F11	41°North by West/Facing North	Straight	f01	1567.6 min.	8.2 lowest	15.0	0.0	f09	2012.0 max.	10.4 highest	/	/	/	/	/	/	/	/	/	/
	F19	1°West by South/Facing West	Straight	f02	877.5 min.	9.7 highest	26.0	0.6	f09	3706.2 max.	9.0 lowest	/	/	/	/	/	/	/	/	/	/
	F22	South/Facing South	Straight	f01	559.2 min.	7.9 lowest	12.0	0.2	f09	2283.7 max.	9.4 highest	/	/	/	/	/	/	/	/	/	/

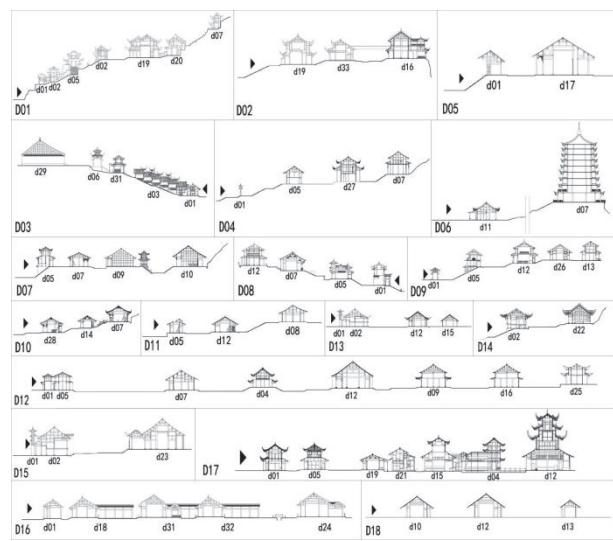


Figure 5 Vertical layout of Taoist temples in Chengdu

By comparing the vertical layout of the axial space of Buddhist temples with that of Taoist temples, the following characteristics were found:

- 1) In terms of the hall height, most Buddhist temples follow the tradition that the larger the hall is, the higher it will be. Therefore, the main hall of Buddhist temples is usually the largest and highest building in the entire axial space. However, there is also an exception when the largest hall is the main hall, while the highest hall is the first hall instead of the main one, so as to highlight the entrance space. But this tradition is not followed in Taoist temples: the arrangement of halls is more random in some temples, with the highest (lowest) hall not necessarily being the largest (smallest) one.
- 2) In terms of vertical changes, Buddhist temples form a more rigorous architectural layout mainly by changing the length of level distance to highlight the core areas or buildings. And the rank order of different halls in Buddhist temples can be shown by comparing their lengths of level distance. In contrast, Taoist temples prefer to use different hall heights to enrich the vertical layout of the axial space, making them multi-layered, well-proportioned, and rhythmic.

**Table 3** Analysis of the axial space of Buddhist temples (continuation)

Number of Halls	No. / Temple	Orientation	Moving Line	No. / Hall	Hall Area / m <sup>2</sup>	Hall Height / m	Level Distance / m	Height Difference / m	No. / Hall	Hall Area / m <sup>2</sup>	Hall Height / m	Level Distance / m	Height Difference / m	No. / Hall	Hall Area / m <sup>2</sup>	Hall Height / m	Level Distance / m	Height Difference / m	No. / Hall	Hall Area / m <sup>2</sup>	Hall Height / m					
Three	F07	40°South by East/Facing South	Straight	f01	307.9 min.	9.6 highest	2.0	0.2	f05	1224.3	6.0 lowest	5.0	0.6	f09	1325.9 max.	6.8	/	/	/	/	/	/				
	F09	9°East by North/Facing East	Straight	f01	2652.9	7.8	15.0	2.0	f09	2987.1 max.	9.3 highest	2.5	3.2	f08	1046.0 min.	7.8 lowest	/	/	/	/	/	/				
	F20	24°West by North/Facing West	Straight	f05	730.1	7.6	22.0	0.0	f08	507.0 min.	6.0 lowest	10.0	0.6	f09	1098.6 max.	8.8 highest	/	/	/	/	/	/				
	F23	41°South by West/Facing South	Straight	f01	358.0 min.	6.5 lowest	20.0	0.0	f09	832.3	8.7	5.0	0.0	f08	856.6 max.	9.0 highest	/	/	/	/	/	/				
Four	F01	4°South by East/Facing South	Straight	f01	370.7	9.5 highest	60.0	18.4	f05	125.0 min.	6.1 lowest	12.0	3.4	f06	422.0	6.1	18.0	0.7	f09	455.0 max.	7.0	/	/			
	F03	11°South by West/Facing South	Straight	f01	823.0 min.	7.3	14.0	3.6	f02	919.0	5.9 lowest	3.0	1.5	f08	1461.3	11.2	6.0	4.7	f09	1510.0 max.	13.6 highest	/	/	/		
	F04	35°East by North/Facing East	Straight	f05	1726.6	9.4	6.0	0.2	f08	2176.9	10.4	15.0	1.4	f09	1605.5 min.	7.8	9.0	1.4	f03	3378.4 max.	12.6 highest	/	/	/		
	F06	32°South by East/Facing South	Straight	f01	15.9 min.	7.4 lowest	15.0	0.7	f12	296.0	8.8	9.0	0.0	f09	328.3	10.0	12.0	0.0	f13	365.8 max.	15.0 highest	/	/	/		
	F12	15°West by North/Facing West	Straight	f01	67.9 min.	12.8	36.0	0.8	f05	292.2	10.3 lowest	45.0	5.8	f09	459.2	10.5	80.0	0.0	f03	613.5 max.	15.0 highest	/	/	/		
	F13	3°South by West/Facing South	Straight	f01	686.8	6.2 lowest	10.0	0.2	f08	572.0	6.3	8.0	0.0	f15	766.3 max.	10.9 highest	14.0	0.0	f09	483.6 min.	9.4	/	/	/		
	F16	3°South by West/Facing South	Straight	f01	170.8 min.	7.1 lowest	24.0	0.2	f07	396.0	7.3	15.0	0.0	f09	673.8	10.8	24.0	0.2	f03	724.1 max.	14.8 highest	/	/	/		
	F18	5°South by East/Facing South	Straight	f02	464.9	10.3 highest	22.0	0.0	f08	625.7	7.3	8.0	0.0	f09	872.6 max.	7.6	6.0	0.0	f11	355.8 max.	6.0 lowest	/	/	/		
Five	F24	31°West by South/Facing West	Straight	f01	185.0 min.	8.1 lowest	15.0	0.0	f05	325.8	8.4	10.0	0.0	f08	454.6	8.5	18.0	0.0	f09	730.1 max.	9.6 highest	/	/	/		
	F02	14°East by North/Facing East	Curve	f01	530.5	7.3	50.0	5.4	f09	1214.3 max.	12.2 highest	10.0	1.3	f15	336.1 min.	6.1 lowest	10.0	0.0	f03	829.4	7.8	5.0	3.3	f10	685.4	7.8
	F08	26°West by North/Facing West	Curve	f01	540.5	7.8 lowest	12.0	0.9	f05	1044.0	8.2	15.0	8.0	f09	1504.3 max.	9.0 highest	20.0	1.2	f08	485.1 min.	8.6	9.0	4.6	f03	1036.9	9.9
	F10	27°South by East/Facing South	Curve	f01	107.2 min.	7.8	30.0	0.8	f07	526.5	7.4	3.0	2.2	f08	530.4	7.2 lowest	3.0	6.4	f06	482.1	7.6	27.0	0.0	f09	630.1 max.	14.6 highest
	F14	37°South by West/Facing South	Straight	f05	210.0 min.	10.0	15.0	0.0	f08	216.2	10.6 lowest	13.0	0.0	f09	324.4	10.4	11.0	0.0	f04	325.5	12.6	15.0	0.2	f03	614.8 max.	15.9 highest
	F15	1°South by East/Facing South	Straight	f01	109.1 min.	7.8 lowest	12.0	0.0	f05	187.1	10.3	22.0	0.4	f13	262.8	11.3	20.0	0.6	f09	381.3	13.8	12.0	0.0	f03	507.0 max.	17.0 highest
	F17	27°South by West/Facing South	Straight	f01	257.3	7.5 lowest	13.0	0.0	f05	177.0 min.	8.7	22.0	0.2	f08	273.3	8.4	20.0	0.0	f09	556.0	8.5	12.0	0.0	f03	713.5 max.	10.47 highest
	F21	21°West by North/Facing West	Curve	f01	159.0 min.	6.6 lowest	4.5	1.4	f07	517.4	6.6	50.0	8.6	f14	632.3	7.2	9.0	1.0	f09	693.1	9.7	15.0	2.2	f08	1643.2 max.	11.7 highest

**Table 4** Analysis of the axial space of Taoist temples

Eight	Seven			Five			Number of Halls No. (Temple)
	D12	D17	D01	D16	D09	D03	
31° South by West/Facing South	31° South by East/Facing South	32° West by South/Facing West	22° South by East/Facing South	1° East by South/Facing East	16° South by East/Facing South	Orientation	
Straight	Curve	Curve	Straight	Curve	Curve	Moving Line	
d01	d01	d01	d01	d01	d01	No. / Hall	
107.5 min.	721.2	61.7 min.	155.0 min.	195.0 min.	462.3 min.	Hall Area / m <sup>2</sup>	
9.6 lowest	9.0	7.1 lowest	7.2 lowest	4.2 lowest	9.5 lowest	Hall Height / m	
3.0	3.0	3.0	15.0	20.0	5.0	Level Distance / m	
0.0	0.2	2.1	0.6	4.5	0.0	Height Difference / m	
d05	d05	d02	d18	d05	d03	No. / Hall	
161.9	4863	300.6	292.0	1268.2	2808.9 max.	Hall Area / m <sup>2</sup>	
10.1	8.8	12.6	9.4	9.2	11.3	Hall Height / m	
60.0	6.0	10.0	12.0	21.0	4.0	Level Distance / m	
0.0	0.0	6.3	0.2	1.4	17.2	Height Difference / m	
d07	d19	d05	d31	d12	d31	No. / Hall	
526.0	303.7	209.0	405.0	1725.2 max.	481.3	Hall Area / m <sup>2</sup>	
11.2	5.3 lowest	11.0	10.0	11.2 highest	8.8	Hall Height / m	
30.0	1.4	16.0	10.0	10.0	4.5	Level Distance / m	
1.8	0.4	12.6	0.2	1.1	4.2	Height Difference / m	
d04	d21	d02	d32	d26	d06	No. / Hall	
132.3	462.2	548.8	166.8	1473.1	466.2	Hall Area / m <sup>2</sup>	
10.7	7.2	8.9	9.3	8.1	10.3	Hall Height / m	
25.0	1.5	16.0	26.0	8.0	9.0	Level Distance / m	
0.6	0.0	1.8	0.0	0.2	0.6	Height Difference / m	
d12	d15	d19	d24	d13	d29	No. / Hall	
707.3 max.	604.9	2837.8 max.	411.8 max.	829.4	1073.4	Hall Area / m <sup>2</sup>	
15.1 highest	11.1	16.6 highest	10.6 highest	7.4	15.3 highest	Hall Height / m	
20.0	5.6	5.0	/	/	/	Level Distance / m	
0.6	0.4	1.8	/	/	/	Height Difference / m	
d09	d04	d20	/	/	/	No. / Hall	
106.1	66.4 min.	1345.8	/	/	/	Hall Area / m <sup>2</sup>	
12.8	5.3	13.8	/	/	/	Hall Height / m	
20.0	4.0	21.0	/	/	/	Level Distance / m	
0.0	0.4	22.1	/	/	/	Height Difference / m	
d16	d12	d07	/	/	/	No. / Hall	
146.4	2853.7 max.	409.6	/	/	/	Hall Area / m <sup>2</sup>	
12.8	19.1 highest	10.5	/	/	/	Hall Height / m	
22.0	/	/	/	/	/	Level Distance / m	
4.5	/	/	/	/	/	Height Difference / m	
d25	/	/	/	/	/	No. / Hall	
199.4	/	/	/	/	/	Hall Area / m <sup>2</sup>	
11.3	/	/	/	/	/	Hall Height / m	

**Table 4** Analysis of the axial space of Taoist temples (continuation)

## 5 CONCLUSION

Through the comparative study of the axial space of Buddhist and Taoist temples in Chengdu from various aspects, the conclusion can be made as follows:

1. Firstly, in terms of the category of constituent elements of Buddhist and Taoist temple architectures, there are two types: the halls for worshipping animated objects, and the halls for worshipping unanimated objects. Among these constituent elements, the Front Gate, the Xilou Tower and the Guanyin Hall are found in both Buddhist and Taoist temples. And the elements of Buddhist and Taoist temples are also characterized by localization and secularization, such as the Chuanwang Hall and the Xilou Tower; secondly, the Buddhist temples have fewer types of architecture and fewer halls than the Taoist temples, with the halls only worshipping Buddhist deities; on the contrary, the halls in the Taoist temples, worshipping deities of different systems, are various in number and more complex in type. In addition, in terms of the occurrence frequency of constituent elements, the Daxiongobao Hall (the Shakyamuni Hall) is an essential element in every Buddhist temple, while this is not the case in the Taoist temples where most elements appear only once in one of the temples.

2. In terms of the plane layout, both Buddhist and Taoist temples, with linear type of moving lines, are mainly

oriented towards the south. More specifically, taking the Front Gate as the first hall, most of them follow the rule that the first hall has the smallest area and the last one the largest. However, the halls of Buddhist temples have fewer categories and are more well-ordered in the plane layout, with obvious ranking divisions; while the halls in Taoist temples, lacking obvious patterns of combination or ranking divisions, are more flexible in the plane layout.

3. In terms of the vertical layout, for most Buddhist temples are characterized by the correspondence between the hall height and its size, the level distance and size of a hall usually reflect its rank and status; while for Taoist temples, the vertical height differences of the halls usually reflect the layering variation of halls, forming a rich vertical layout.

In general, Buddhist temples and Taoist temples have great differences in the overall architectural layout. There are two main similarities, one is the type of components, and the performance of localization. Second, most of the buildings face south and organize the flow of people along a straight line. The differences show the respective characteristics of Buddhist and Taoist temples. Buddhist temples have open space and rigorous layout. Halls in Buddhist temples are usually arranged in a well-organized way according to the importance of hall and are built along a straight line, featuring "Xian" (openness) and "Xu" (orderliness) with a sense of solemnity. By contrast, Taoist

temples have compact space and flexible layout with many twisting moving lines. Halls in Taoist temples are usually arranged in an irregular way, without obvious ranking divisions. Moreover, for their unique geographical location in mountainous areas, there are more halls in the axial space of most Taoist temples, featuring both "Yin" (seclusion) and "Fang" (freedom) with a sense of peace and quietness. Actually, the above characteristics are formed under the influence of various factors, including local culture, history, geographical environment and other factors in Chengdu. Moreover, the ideological and doctrinal differences between Buddhism and Taoism should also be considered. For example, due to the penetration of the local secular culture in Chengdu, the former Buddhist temple has been transformed into the present Taoist temple or formed the custom of honoring both Buddhist and Taoist deities in one temple. Though all these factors have led to the mutual integration of spatial layout of Buddhist temples with that of Taoist temples, there are fundamental differences between them in nature.

## 6 REFERENCES

- [1] Liu, Z. Y. (2000). The Development of Palace Views and Taoist Culture. *Chinese Taoism*, 3, 28-34.
- [2] Sun, Z. W. (2005). The Formation, Development, and Achievements of Chinese Taoist Architectural Art. *Central China Architecture*, S1, 141-150.
- [3] Wang, M. X. (2014). A Brief Discussion on the "One Street, Three Temples" and Its Unique Architectural Pattern in Huanglongxi Ancient Town. *Beauty and Times (Middle)*, 1, 79-81.
- [4] Li, P. H. (2019). Research on the Content and Characteristics of Architectural Decoration - Taking the Taoist Temple in Sichuan as an Example. *Building Materials and Decoration*, 32, 81-82.
- [5] Xu, Y. Y. (2021). Study on architectural characteristics and protection of Foguang Temple in Wutai Mountain. *Wutai Mountai-n Research*, 4, 60-63.
- [6] Wang, C. E. & Cui, Y. C. (2021). Artistic conception of Buddhist temple space from the perspective of the Five Aggregates: A case study of Bodhisattva Roof on Mount Wutai. *Central China Architecture and Architecture*, 39(02), 133-136.
- [7] Dong, Q. M. (2023). Aesthetic Analysis of Taoist Architecture art and culture in Wudang Mountain. *China Construction*, 10, 105-107.
- [8] Li, K. J. (2018). A Brief Discussion on the artistic characteristics of Chinese Buddhist Architecture - A Case study of the Four famous Buddhist Mountains in China. *Journal of Heihe University*, 9(10), 147-148.
- [9] Yan, A. (2020). Listening to Cultural relics - The Architectural art of the Chang Taoist Temple in Qingcheng Mountain, Sichuan Province. *Urban Architecture*, 17(14), 128-129.
- [10] Li, P. H. (2019). An analysis on the architectural decoration of Taoist temples in Sichuan - taking Qingcheng Mountain Taoist Temple as an example. *Building Materials and Decoration*, 32, 101-102.
- [11] Liao, Y. L. & Li, J. J. (2021). Analysis on the architectural art phenomenon of Fuhu Temple in Mount Emei. *Sichuan Architecture*, 38(06), 27-29.
- [12] Chen, L. Q. (2007). On the characteristics of Buddhist Temple Garden in Mount Emei. *Chinese Culture Forum*, 03, 29-34.
- [13] Zhang, J. N., Chen, Y., & Li, Y. Z. (2018). Analysis on the layout characteristics of Taoist buildings in Chengdu Area. *Arch-itecture and Culture*, 02, 208-211.
- [14] Li, X. L. (2020). Analysis on regional characteristics of Taoist architecture in Sichuan. *Journal of Sichuan Provincial Correspondence College for Cadre*, 02, 61-65.
- [15] Zhong, H. B. (2014). A study on the aesthetic characteristics of Taoist Architecture -A case study of Qingyang Palace in Chengdu. *Journal of Changchun University of Education*, 30(17), 70-71.
- [16] Wang, J. Q. (2021). Exploration of the regionalization trend of Bashu Buddhist Temple from the cliff stone carving of Anyu-e in Dazu. *Architectural Skills*, 27(04), 103-105.
- [17] Zhang, Z. G. (2022). Buddhist Culture and Art and the Sinicization of Buddhism. *Fayin*, 12, 21-24.
- [18] Sheng, Y. (2008). On the Sacredness and Secularization of Buddhist Temples. *Consumer Guide*, 19, 225.
- [19] Xie, L. J. & Guo, J. S. (2021). The Values of Taoism and Buddhist God of Wealth Culture. *Chinese Religion*, 12, 72-73.
- [20] Yuan, S. (2018). Chinese Culture and the Sinicization of Taoism. *World Religious Culture*, 03, 5-7.

## Contact information:

### **Yunzhang LI**

College of Architecture & Environment, Sichuan University, China

### **Jingya LI**

College of Architecture & Environment, Sichuan University, China

### **Xi LIU**

(Corresponding author)  
College of Architecture & Environment, Sichuan University, China  
E-mail: 18408212776@163.com